

REMARKS

Claims 1-14 are pending in this application. In the Final Office Action, Claims 1-2 [sic 1-3] and 8-9 [sic 8-10] were rejected under 35 U.S.C. § 103(a) as being unpatentable over Publication US 2003/0002518 A1 of Shibutani in view of a publication entitled “A New Soft Handover Scheme Using Punctured Turbo Codes in the Wideband CDMA System” by Kim et al.; and Claims 4-7 and 11-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibutani in view of a Kim et al. and further in view of Publication US 2004/0156328 A1 of Walton et al.

In regard to the rejection set forth at page 4 of Final Office Action, it is respectfully submitted that it is incorrect to allege that “it would have been obvious to one having ordinary skill in the art at the time the invention was made to [have] multiple transmitting paths, since it has been held that mere duplication of the essential working parts ...”. This statement fails to consider the recitation that is presented in each independent claim that clearly indicates that transmission occurs **after summing** of the second and third punctured modulated symbols streams. In particular, Claim 1 recites transmitting a modulated symbol stream output from the second puncturer and a modulated symbol stream output from the third puncturer through the second transmission antenna **after summing** up the modulated symbol streams. Claim 8 similarly recites transmitting the second and third punctured modulated symbol streams through the second transmission antenna **after summing** up the second and third punctured modulated symbol streams.

That is, in the invention of the pending application, transmission occurs after summing of the second and third punctured modulated symbols streams, which is beyond any alleged duplication of essential working parts. Shibutani fails to teach or discloses this recitation of Claims 1 and 8, and Kim fails to cure this defect in Shibutani. For at least this reason, the rejection must be withdrawn.

In the Response to Arguments section of this Final Office Action, the Examiner states that “Contrary to applicant’s assertion, claims 1, 8, do not recite a puncturing technique for

achieving both multiplexing gain and diversity gain without overlapping of the transmission signal, i.e. the puncturing technique for eliminating an interference component caused by transmitting the overlapped signal, and the feature of summing up the modulation symbol stream.” (Final Office Action, page 2.) Accordingly, Claims 1 and 8 are amended to more clearly define puncturing for eliminating an interference component. No new matter is presented.

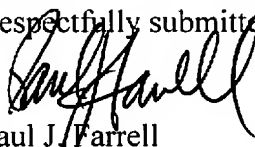
In addition, Shibutani does not consider that multiple antennas are located in one base station or one mobile terminal. To the contrary, the present invention considers the case where the multiple antennas are located in one base station or one mobile terminal. That is, the at least three transmit antennas that are pointed out by the Examiner actually indicate at least three access terminals. In the present invention, the “at least three transmit antennas” means that three antennas are located in one place and can process signals together. As such, since the multiple antennas are gathered in one place, the present invention can obtain a diversity gain by transmitting the same kind of information to two or more modulators. This feature is described in Fig. 9 of the Specification, in particular in regard to a connection line between a modulator and an encoder.

The cited reference of Kim et al. relates to a method of puncturing a bit from a turbo code, and also does not consider the multiple antennas. Herein, “to base station 1, 2” indicates a signal that goes from an RNC to BSs 1 and 2, in which the BSs 1 and 2 are located in a different place geographically. Thus, Kim et al. fails to consider a concept of the multiple antennas in which several antennas are located in one place. Further, Kim et al. is directed to a method of puncturing a bit, while the present invention relates to a method of a puncturing combination of a plurality of bits, that is, a signal passing through the modulator (symbol puncturing). The puncturing method of Walton et al. is also a method of puncturing a bit as in Kim et al.

For at least the above reasons independent Claims 1 and 8 are believed to be in condition for allowance. Without conceding the patentability *per se* of dependent Claims 2-7 and 9-14, these claims are likewise believed to be allowable by virtue of their dependence on their respective amended independent claims.

Accordingly, all of the claims pending in the Application, namely, Claims 1-14, are believed to be in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, it is requested that the Examiner contact Applicants' attorney at the number given below.

Respectfully submitted,



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